



July 31, 2002

630-293-6330

VIA CERTIFIED MAIL RETURN RECEIPT REQUIRED

Ms. Jule Fausto
State of Utah
Department of Environmental Quality
Division of Radiation Control
168 North 1950 West
Salt Lake City, Utah 84114-4850

SUBJECT: Response to Notice of Violation dated July 8, 2002

REFERENCE: Teachers Site, Chicago, IL

Dear Ms. Fausto:

Enclosed find our written response to the July 8, 2002 Notice of Violation. As a part of this investigation a representative from Kerr-McGee met with you on July 11, 2002. A representative for our supplier, Baker Tanks was also present. During this meeting, evidence of corrective actions taken was supplied. This response also includes a copy of our revised NRC Uniform Low Level Radioactive Waste Manifest Forms 540 and 541 that will be used for future shipments of this type. Kerr-McGee will no longer be using the Bill of Lading (BOL) as the shipping paper. Please note that as of July 31, 2002; the waste material from the Chicago Sites is being shipped under new waste profile # 0659-02. The revised Form 541 attached to this response reflects this new waste profile.

In this letter, our proposed corrective action is listed after each alleged violation listed. We believe these actions will satisfy all regulatory requirements.

Violation 1

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 Code of Federal Regulations (CFR) Part 173.475(b) states, "Quality control requirements prior to each shipment of Class 7 (radioactive) materials. Before each shipment of any Class 7 (radioactive) materials package, the offeror must ensure, by examination or appropriate tests, that the packaging is in unimpaired physical condition, except for superficial marks".

Contrary to this, Kerr-McGee offered into transportation intermodal container number BKRU 012887 on June 11, 2002, containing an reportable quantity (R.Q.), of Radioactive material, low specific activity, not otherwise specified (nos), that was leaking. It was noted during unloading operations at the Envirocare facility, that this intermodal container had failed to properly contain its contents, due to advanced corrosion in the floor panel where welds had rusted and broke through, leaking material. This packaging contained unwrapped bulk material in a reusable package. Before reuse, each packaging must be inspected and may not be reused unless free from incompatible residue, rupture, or other damage which reduces its structural integrity.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level III, with a base Civil Penalty of \$2,500.00.

No Civil Penalty is proposed.

Response 1

Kerr-McGee routinely inspects each container as part of lining process. First, the empty containers are checked for standing water and any water is squeegeed out the back door. After the container is dry, the laborer enters the container and spreads a bag of cat litter as an absorbent across the entire base of the empty container. The next step is to spread a thick bead of water-absorbing polymer across the inside of the tailgate to absorb any water that might accumulate inside the container. At the time the laborer is spreading the polymer and cat litter, he performs a visual inspection of the integrity of the insides of the container. Any observed damage or deterioration would be cause for rejection of the container.

All of the containers have some degree of rust, but we have not observed any containers to date that had advanced corrosion to the point where the welds broke through. If the floor of the container were in poor condition, the laborer would have noted it during the lining process. Kerr-McGee believes that this container was in an acceptable condition prior to loading, and that damage to the weld occurred during the loading process, when it is possible that a steel pipe or concrete chunk landed directly on the weld in question during the first bucket placed into the container. The damage was a hairline crack that was located in an area that indicated an indention was made.

The alleged violation noted that the package contained "unwrapped" material. After discussion with the inspector, it was noted that the shipping paper and the NRC Uniform Low Level Radioactive Waste Manifest Form 540 did not indicate the shipment was lined. The report that we received was that the material leaking from the container was in fact water - reported as non-contact water. The report further stated that the material was dry. We believe that the liner retained its general integrity with the exception of the internal impact area and did not allow the material to sift through. A sample of our liner has been provided to your office for inspection.

Additionally, there appeared to be a misconception that the container was being returned to Kerr-McGee without cleaning. All of our containers are cleaned and purged of all material by Envirocare prior to returning them for re-use. Kerr-McGee receives a certificate from Envirocare that states this for the returned containers.

Kerr-McGee has shipped approximately 2,000 intermodal containers of material to the site over the past seven years. This is the first leak that we know of in any container that was not caused by rough handling or an accident in transportation.

Corrective Actions: (1) We stressed the importance of the visual inspection to ensure the integrity of the containers during our morning safety meeting on July 12, 2002. Further, Kerr-McGee has had verbal discussions with the supplier, Baker Tanks, and they are in the process of developing a water test procedure for the intermodal containers that they provide. (2) The need to place a load of material relatively free of debris in the container prior to placing heavy debris in the bottom of the container was emphasized with our loading crew at a meeting on July 17, 2002. Each load of material placed in the container is observed by a member of that crew. If that person sees heavy debris in the initial load he is to request that it be put back into the excavated area and a load with less debris placed into the bottom of the container.

Violation 2

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license

regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.203(d)(10)(i) states, "Additional description requirements, Radioactive material. For a shipment required by this subpart (C) to be consigned as exclusive use: An indication that the shipment is consigned as exclusive use".

Contrary to this, the shipper offered into transportation a straight bill of lading, shipment number 0659-01, dated June 11, 2002, without indicating that this shipment was an exclusive use shipment. Inspections revealed that the shipper provided an Nuclear Regulatory Commission (NRC) Uniform Low-Level Radioactive Waste Manifest Form 540 which is required to be filed for shipments of low-level radioactive waste intended for disposal at a licensed land disposal facility with box number two checked to indicate this to be an exclusive use shipment. Additionally, shipments in strong tight packages are required to be consigned as exclusive use shipments.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level V, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 2

Prior to shipping, the drivers that transport the loaded intermodal containers from the Site to the railyard attend D.O.T. training provided by Kerr-McGee. This training includes the route and procedures that the carrier is to take. The routing instructions of the shipment indicate that the shipment is in fact an exclusive use shipment.

Corrective Action: The BOL will no longer be used as a shipping paper. Instead, the NRC Forms 540 & 541, Uniform Low-level Radioactive Waste Manifest, will be used as the shipping paper. A copy of the revised manifest has been attached to this letter. The Form 540 is marked as an "Exclusive Use" shipment.

Violation 3

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.202(a)(3) states, "Description of hazardous materials on shipping papers. The shipping description of a hazardous material on the shipping paper must include: The identification number prescribed for the material as shown in column 4 of the 172.01 table."

Contrary to this, the shipper offered into transportation a straight bill of lading, shipment number 0659-01, dated June 11, 2002, without indicating the identification number prescribed for an RQ of Radioactive material, low specific activity, nos, LSA-I, which should have been UN2912.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level V, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 3

Corrective Action: The BOL will no longer be used as a shipping paper. Instead, the NRC Forms 540 & 541, Uniform Low-level Radioactive Waste Manifest, will be used as the shipping paper. A copy of the revised manifest has been attached to this letter.

Violation 4

R3 13-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R3 13-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.203(d)(3) states, "Additional description requirements. Radioactive material. The description for a shipment of a Class 7 (radioactive) material must include the following additional entries as appropriate: A description of the physical and chemical form of the material, if the material is not in special form (Generic chemical description is acceptable for chemical form)".

Contrary to this, the shipper offered into transportation a straight bill of lading, shipment number 0659-01, dated June 11, 2002, without describing the physical and chemical form of the material.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level IV, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 4

The NRC Uniform Low Level Radioactive Waste Manifest Form 540 contained the items solid/oxides as the physical and chemical form of the material. This did not however get placed on the BOL.

Corrective Action: The BOL will no longer be used as a shipping paper. Instead, the NRC Forms 540 & 541, Uniform Low-level Radioactive Waste Manifest, will be used as the shipping paper. A copy of the revised manifest has been attached to this letter.

Violation 5

R3 13-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.203(d)(2) states, "Additional description requirements. Radioactive material. The description for a shipment of a Class 7 (radioactive) material must include the following additional entries as appropriate: The name of each radionuclide in the Class 7 (radioactive) material that is listed in 173.435 of this subchapter. For mixtures of radionuclides, the radionuclides that must be shown must be determined in accordance with 173.433(f) of this subchapter".

Contrary to this, the shipper offered into transportation a straight bill of lading, shipment number 0659-01, dated June 11, 2002, without naming the required radionuclides in accordance with the formula found in 173.433(f). The bill of lading should have included the names of Radium-226 in addition to the parent shipped.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level IV, with a base Civil Penalty of \$750.00.

No Civil Penalty is proposed.

Response 5

The basic isotope constituting 95% of the hazard is natural thorium. Kerr-McGee's interpretation of the regulation therefore listed Th-232 and daughter products as the isotope providing the hazard on the BOL, in fulfillment of this requirement.

Corrective Action: The BOL will no longer be used as a shipping paper. Instead, the NRC Forms 540 & 541, Uniform Low-level Radioactive Waste Manifest, will be used as the shipping paper. A copy of the revised manifest has been attached to this letter.

Violation 6

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R3 13-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.203(d)(4) states, "Additional description requirements. Radioactive material. The description for a shipment of a Class 7 (radioactive) material must include the following additional entries as appropriate: The activity contained in each package of the shipment in terms of the appropriate SI units e.g., Becquerel, Terabecquerel, etc.) or in terms of the appropriate SI units followed by the customary units (e.g., Curies, millicuries, etc.)".

Contrary to this, the shipper offered into transportation a straight bill of lading, shipment number 0659-0 1, dated June 11, 2002, without indicating the activity contained in each package. The bill of lading should have indicated the "total" activity contained in the package.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level IV, with a base Civil Penalty of \$750.00.

No Civil Penalty is proposed.

Response 6

Corrective Action: The Bill of Lading (BOL) will no longer be used as a shipping paper. Instead, the NRC Forms 540 & 541, Uniform Low-level Radioactive Waste Manifest, will be used as the shipping paper. A copy of the revised manifest has been attached to this letter.

Violation 7

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R3 13-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 173.433(f) states, "Requirements for determining A and A values for radionuclides and for the listing of radionuclides on shipping papers and labels. Shipping papers and labeling. For mixtures of radionuclides, the radionuclides (n) that must be shown on shipping papers and labels in accordance with 172.203 and 172.403 of this subchapter, respectively, must be determined on the basis of the following formula.

$$\sum_{i=1}^{n} \frac{a_{(i)}}{A_{(i)}} \ge 0.95 \sum_{i=1}^{n+m} \frac{a_{(i)}}{A_{(i)}}$$

Contrary to this, the shipper offered into transportation a straight bill of lading, shipment number 0659-0 1, dated June 11, 2002, without listing the required radionuclides in accordance with the above formula. The bill of lading should have included the Radium-226 in addition to the Thorium-232 because, it's not a daughter of Thorium-232 and is listed on the NRC 540 Form as a detectable radionuclide.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level IV, with a base Civil Penalty of \$750.00.

No Civil Penalty is proposed.

Response 7

Corrective Action: The BOL will no longer be used as a shipping paper. Instead, the NRC Forms 540 & 541, Uniform Low-level Radioactive Waste Manifest, will be used as the shipping paper. A copy of the revised manifest has been attached to this letter.

Violation 8

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.203(c)(2) states, "Additional description requirements. Radioactive material. The description for a shipment of a Class 7 (radioactive) material must include the following additional entries as appropriate: The letters "RQ" shall be entered on the shipping paper either before or after, the basic description required by 172.202 for each hazardous substance".

Contrary to this, the shipper offered into transportation an incorrect NRC Uniform Low Level Radioactive Waste Manifest Form 540, for shipment number 0659-01-20012, dated June 11, 2002. This shipping paper was incorrect account it did not include the letters "RQ" required by 172.202 for each hazardous substance".

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level V, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 8

The BOL was used as the shipping paper. It included the letters "RQ" before the description of the material. This description was not used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540.

Corrective Action: The basic description is now used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540. When material reaches the reportable quantity level, it is recorded with the letters "RQ". A copy of the NRC Uniform Low Level Radioactive Waste Manifest Form 540 is attached to this letter.

Violation 9

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.202(a)(2) states, "Description of hazardous material on shipping papers. The shipping description of a hazardous material on the shipping paper must include: The hazard class or division prescribed for the material as shown in column 3 of the 172.101 table (class names or subsidiary hazard class or division number may be entered following the numerical hazard class, or following the basic description)".

Contrary to this, the shipper offered into transportation an incorrect NRC Uniform Low-Level Radioactive Waste Manifest Form 540, for shipment number 0659-01-200 12, dated June 11, 2002. This shipping paper was incorrect because it did not include the hazard class prescribed for the materials shipped, hazard Class 7 should have been shown.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level V, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 9

The BOL was used as the shipping paper. It included Class 7 in the description of the material. This description was not used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540.

Corrective Action: The basic description is now used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540. It includes Class 7. A copy of the revised NRC Uniform Low Level Radioactive Waste Manifest Form 540 is attached to this letter.

Violation 10

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.202(a)(3) states, "Description of hazardous material on shipping papers. The shipping description of a hazardous material on the shipping paper must include: The identification number prescribed for the material as shown in column 4 of the 172.101 table".

Contrary to this, the shipper offered into transportation an incorrect NRC Uniform Low-Level Radioactive Waste Manifest Form 540, for shipment number 0659-01-20012, dated June 11, 2002. This shipping paper was incorrect account it did not include the identification number prescribed for the materials shipped, identification number UN 2912.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level V, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 10

The BOL had been modified to include "UN 2912" in the description and classification section of the BOL prior to the incident. This error occurred when the BOL format was placed into the computer and was soon noticed and corrected. The orange panel on the outside of the container did reflect the material as 2912.

Corrective Action: The basic description is now used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540. This description contains the ID number UN-2912. A copy of the NRC Uniform Low Level Radioactive Waste Manifest Form 540 is attached to this letter.

Violation 11

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license

regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.203(d)(11) states, "Additional description requirements. Radioactive material. The description for a shipment of a Class 7 (radioactive) material must include the following additional entries as appropriate: For a shipment of low specific activity material or surface contaminated objects, the appropriate group notation of LSA-I, LSA-II, LSA-III, SCO-I, or SCO-II".

Contrary to this, the shipper offered into transportation an incorrect NRC Uniform Low- Level Radioactive Waste Manifest Form 540, for shipment number 0659-01-20012, dated June 11, 2002. This shipping paper was incorrect account it did not include the appropriate group notation of LSA-I.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level V, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 11

The BOL was used as the shipping paper. It included LSA-1 in the description of the material. This description was not used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540.

Corrective Action: The basic description is now used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540. The description includes LSA-1. A copy of the NRC Uniform Low Level Radioactive Waste Manifest Form 540 is attached to this letter.

Violation 12

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

49 CFR Part 172.202(a)(1) states, "Description of hazardous material on shipping papers. The shipping description of a hazardous material on the shipping paper must include: The proper shipping name prescribed for the material in column 2 of the 172.101 table".

Contrary to this, the shipper offered into transportation an incorrect NRC Uniform Low-Level Radioactive Waste Manifest Form 540, for shipment number 0659-01-20012, dated June 11, 2002. This shipping paper was incorrect account it did not include the proper shipping name prescribed for the materials shipped, an reportable quantity (R.Q.), Radioactive material, low specific activity, not otherwise specified (nos).

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level IV, with a base Civil Penalty of \$750.00.

No Civil Penalty is proposed.

Response 12

The BOL was used as the shipping paper. It included the proper shipping name of the material as "RQ, Radioactive Material, Low Specific Activity, N.O.S." This description was not used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540.

Corrective Action: The basic description is now used on the NRC Uniform Low Level Radioactive Waste Manifest Form 540. It includes "RQ, Radioactive Material, Low Specific Activity, N.O.S.". A copy of the NRC Uniform Low Level Radioactive Waste Manifest Form 540 is attached to this letter.

Violation 13

R313-26-6, states; "Generator Site Access Permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description".

R313-15-1008(3), states; "Labeling. Each package of waste shall be clearly labeled to identify whether it is Class A, Class B, or Class C waste, in accordance with Subsection R313-15-1008(1)".

Contrary to the above, on June 24, 2002, the inspector observed packages of Class A waste arriving at Envirocare of Utah. The waste was identified as Class A unstable on the manifest, therefore, the waste should have been labeled as Class A unstable. Intermodal container number BKRU 012887 was identified as not being labeled.

In accordance with R313-14-10, "Severity of Violations", this has been characterized as a Severity Level V, with a base Civil Penalty of \$250.00.

No Civil Penalty is proposed.

Response 13

At the time the shipment in question was received at Envirocare of Utah, the waste material was classified as Pre-1978 11(e)2 material. Per discussion the requirement described in alleged Violation 13 is not applicable for shipments of 11(e)2. As of July 31, 2002 the material has been reclassified under a new waste profile 0659-02. As a result, the revised Form 541 shows "Class A Unstable" in the Waste Classification column. All containers shipped under this new profile will be labeled on the outside of the container as Class A Unstable

Please call me at (630) 293-6331 if you have any questions.

Very truly yours,

KERR-McGEE CHEMICAL LLC

Mark S. Krippel Program Manager

Attachments

cc: Mr. William J. Sinclair, Executive Secretary, Utah DRC

Mr. Fred Micke, RPM/OSC, U.U. EPA

File: DPCH – EPA

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FOR CONSIGNEE USE ONLY	Contamina Unexpecte Labels, Ma Container Other	aste Description Inadequation or Leakage Detected Exposure Rates Detected Exposure Rates Detearkings, etc. Inadequate Integrity Inadequate ons Detected on this Shi	ed cted	accompanied by a separate and B: TITLE: Upon as transfer from the Generator and I C: WASTE MATER applicable governmental laws, ru	RIALS: Generator represe complete hazardous waste complete hazardous waste continued at the disposal si be vested in Environare of L IAL: Generator represents ites, reculations and Environal ION: Generator agrees to material respects to the dat	te by Utah, s and care of inder ta sup	ifest, along with the appropi y Envirocare of Utah, Inc., ar Inc. I warrents that all data set fo of Utah, Inc.'s facility licensis minify Envirocare of Utah, polited on the (UNIFORM LO	riate land-dispo nd all appropriat orth in this (UNIF e. nc., its officers, it	sal restriction notice an le regulatory authorities FORM LOW-LEVEL RA s employees and agen	nd/or certification as in s, title to the Waste Management ADIOACTIVE WAST	required by 40 CFR 268.1 Material which conforms to E MANIFEST) are true and and liability whatsoever if	aterial is a hazardous waste Generator's representation of discorrect in all respects and is such losses or liability result tandards presented by the D	herein shall thereupon in accordance with all is from the failure of the

FORM 541			EN	VIROCARE O	F UTAH	INC.	<u> </u>			1. MANFEST TOTALS					T	2. MANI	FEST NUMBER	
3-84)							NUMBER OF		<u> </u>		SPECIAL N	ICI FAR MATEI	Imment IAIS		1	0659-	02- 0001	
•							PACKAGES/	NET WASTE	NET WASTE	U-233	U-235		PU	TOTAL	1	0005-	J2- 0001	
	UNIFORM LO	STE MAN		TIVE			DISPOSAL CONTAINERS	VOLUME	WEIGHT	0.00E+00	0.00€+00		0.00E+00	0.00E+00	3. PAGE	2 (of 3	PAGES(S)
	CONTAINER	AND WAST	E DESCRIPTIO)N			1	(m3) (ft3) 405	(kg) (tons) 21.6									
										CTIVITY (MBq)				SOURCE	4. SHIPPER NA	ME Kerr-I	AcGee Chemical LLC	
Additional Nuc	lear Regulatory Com	mission (NRC) Requirements f	or Control, Trai	nsfer and		ALL NU	CLIDES	TRITIUM	C-14	Tc-99		1-129	<u>. L </u>	800 Weyrauch Street			
	Dispo	sal of Radioed	ctive Waste				MBq		0.00E+00	0.00E+00	0.00E+00	1	0.00E+00	(kgs) 1.13E+02			Chicago, IL 60185	
							mCi_	<u> </u>	0.00E+00	0.00E+00	0.00E+00		0.00E+00	(tons) 1.25E-01	SHIPMENT ID NU	IMBER		
HISPOSAL CONTAINER D	ESCRIPTION									WAST	E DESCRIPTIO	N FOR EACH	WASTE TYP	E IN CONTAINER				16. WASTE
	6	7	8	•	10 SUR	FACE		PHYSICAL DESCR	RIPTION	14 CHE	MICAL DESCRIPT	ON	15	RADIOLOGICAL DESCRI	PTION			CLASSIFI-
CONTAINER	CONTAINER		WASTE	SURFACE	1	MINATION	J	12	13		1		- I					CATION
IDENTIFICATION	DESCRIPTION	VOLUME	AND	RADIATION		100cm2	WASTE	APPROXIMA	1			WEIGHT	ľ					AS-Class A
NUMBER/			CONTAINER	LEVEL	dpm/	100cm2	DESCRIPTOR	WASTE	SOLIDIFICATION	CHEMICAL FORM		*			IVIDUAL RADIONUCLIDES	Stable		
GENERATOR	(See Notes 1)	(m3)	WEIGHT		1	BETA-	(See Note 2)	VOLUMES(S)		CHELATING AGE	NI	CHELATING	- 1	CONC	ENTRATION, AND CONTAINER TOTAL ACTIVITY			N/A 11(e)2
IO NUMBERS		(ft.3)	(kg)	(mSv/hr) (mR/hr)	1 A. R.	GAMMA			(See Note 3)		1	AGENT IF>0.1%	F	RADIONUCLIDES	pCi/gm MBq		mCi	B-Class B
			(est. tons)	(MPONT)	AU-TIA	U.S.	Ì	(fra)	(300 1000 3)									C-Class C
															Ţ <u></u> _			Class A
BKRU00000	11B LINED	540	25.47	0.8	<200	<2000	22, 29	405	100	Thorium Oxid	e	NP		Th-232	5.56E+02	4.04E+02	1.09E+01	Unstable
														Ra-226	2.52E+02	1.83E+02	4.94E+00	Class A Unstable
														Th-230	< 8.34E+01	< 6.06E+01	< 1.64E+00	Class A Unstable
						-								U-nat	< 5.15E+02	< 3.74E+02	< 1.01E+01	Class A Unstable
													Ţ	<u> </u>				
						_												1
NOTE 1: Container's Description Codes. For containers/ waste requiring disposal in approved structural overpacks (Choose one code as may be applicable.) the numerical code must be followed by "-OP."						NOTE 2: Waste Di		29. Damoffton Rubble		sporator Bottoms/Ske	NOTE 2A. Specific Waste Descriptions (Choose all applicable) NOTE 3: Solidification, Stabilization which predominate by volume) For structural stability requirements, the ST For all solid				tion media meeting disp il code must be followed			

1. Wooden Box or Crafe 2. Metal Box

9 Dernineratizer 10 Gas Cyfinder

3. Plastic Drum or Pail 11 Bulk, Unpackaged Waste 4. Metal Drum or Pall 12. Unpackaged Components

5. Metal Tank or Liner 13. High Integrity Container 6 Concrete Tank or Uner 19. Other. Describe in Rem 6, or additional page.

7 Polyethylene Tank or Liner 8. Pibergians Tank or Uner

A Gondola

E Seavan

B intermodal C End-dump D Roll-off

23. Gan 24. Ot 26. Filter Media

20. Charcoal 21. Incinerator Ash

26 EPA or Sale Hazardous

22. Soli

30 Cellon ton-exchange Media 31, Anion Ion-exchange Media

32. Mored Bed Ion-Exchange Media 33 Contaminated Equipment 25. Aqueous Liquid

34. Organic Liquid (except enimal carcass) 35. Glassware or Labware 27. Mechanical Filter 36. Sealed Source/Device 37 Paint or Plating

43. Activated Material 59. Other. Describe in Nem 11, or additional page

42. Biological Material (Except Animal Carcass)

39 Compactable Tresh

41. Animal Carcars

40. Noncompactable Trash

G Dewalered

H Solid i Combustable

J Non-combustable K Air Filtration Filters

L Asbestos

94 Vinyl Ester Styrene 99. Other. Describe in item 13, or

92. Bitumen 93 Vinyl Chloride

additional page 100. None Required

FORM 541 (3-98)

DRIVER INSTRUCTIONS

This shipment is being transported as an Exclusive Use shipment. As such, it may only be loaded by the direction of the consignor and unloaded under the direction of the consignor or consignee. Any removal, addition to, or movement of any material in this shipment by anyone except under the direction of the consignee or consignor is Forbidden.

PUBLIC SAFETY

- In case of emergency: <u>CALL CHEMTREC</u> 1-800-424-9300
- Then call 1-630-293-6330 to inform consignee
- Priorities for rescue, life saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation.

EMERGENCY RESPONSE INFORMATION

For additional emergency response information, use Guide page 162 of the North American Emergency Response Guide 2000.

Potential Hazards:

- Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents.
- Low radiation hazard when material is inside container. Some material may be released during accidents of moderate severity but risks to people are not great.
- Runoff from control of fire may cause low-level pollution.

Fire:

- Some of the debris may burn, but most do not ignite readily.
- Presence of radioactive material will not influence the fire control process and should not influence selection of techniques.

Spill or Leak:

- Do not unnecessarily touch damaged packages or spilled material.
- Cover material spill with plastic sheet or tarp to minimize spreading.

First Aid:

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.

(3-88)			5. SHIPPER - 1	NAME AND FACILITY Kerr-McGee Chemical LL P.O. Box 548	ıc	Si	0659)	M 540 AND 540A I 541 AND 541A		OF 3 PAGES	8. MANIFEST NUMI (Use this number on all con	
UNIFORM LOW-LEV WASTE M		CTIVE		800 Weyrauch Street West Chicago, IL 6018	5		COLLECTOR PROCESSOR	NRC FORM	1 542 AND 542A AL INFORMATION	N	OF 3 PAGES of Used OF 3 PAGES	0659-02-	0001
SHIPPING	PAPER		UTAH PERMIT	NUMBER: 0110 000 013	SHIPMENT NUMBER	х	GENERATOR TYPE industrial		E - Name and Facility Envirocare of Uta Clive Disposal Sit	Address h, inc.		CONTACT Shipping a	nd Receiving
EMERGENCY TELEPHONE NUMBER (In In Case of Emergency Call CHEMTREC ORGANIZATION			CONTACT	Mark Krippel	L	4	ELEPHONE NUMBER (Include Area Code) 630-293-6330	SIGNA	Interstate 80, Exit Clive, UT 84029 URE - Authorized co		lging waste receipt	TELEPHONE NUMI (435) 86	
	3. TOTAL NUMBE OF PACKAGES	ER	6. CARRIER - I	Name and Address Union Pacific Railroa 1416 Dodge Street	nd	_	EPA I.D. NUMBER SHIPPING DATE				10. CERTIFICATION	DATE	
4. DOES EPA REGULATED YES WASTE REQUIRING A X NO MANIFEST ACCOMPANY	DENTIFIED ON TH MANIFEST ******* EPA MANIFEST NU	<u> </u>	CONTACT	Omaha. NE. 68179 Dale Brav			7/1/02 ELEPHONE NUMBER (Include Area Code) 888-877-7267	proper conditi certifies that t	on for transportation he materials are class	according to the a sified, packaged, an	pplicable regulations of the d labeled and are in prop	ped, packaged, marked, ar the Department of Transport per condition for transport quivalent state regulations	ortation. This also ation and disposal as
THIS SHIPMENT? If "Yes," provide Manifest Number =====>			SIGNATURE - /	Authorized carrier acknowledgin	ng waste receipt	-	Date 7/1/02	AUTHORIZE	D SIGNATURE		πιε Site M	anager	DATE 7/1/02
U.S. DEPARTMENT OF TRANSPORTATION (Including proper shipping name, hazard class and any additional information.)	s, UN ID number	12 DOT LABEL "RADIOACTIVE"	13 TRANSPORT INDEX	14 PHYSICAL AND CHEMICAL FORM			15 HDIVIDUAL HONUCLIDES		TOTAL PACKA	AGE ACTIVITY	17 LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Radioactive Material, Low Specific A	Activity,	NA	NA	Solid / Thorium Oxide	Th-232	, Ra-	226, Th-230, U-nat		MBq 1.79E+02	4.83E+00	LSA-1	21.61 tons	BKRU00001
N.O.S.,Class 7, UN 2912, LSA-1					-							cubic feet	-
Rail Contract DER-UP-C-21242										· 			
STCC Code 4929133 Prepaid	{				·								
DO NOT HUMP PLACARDED													
ROUTE: MM-Blue Island, IAIS-Grand Junction,	, UP - Clive												
FOR CONSIGNEE USE ONLY	Contaminal Unexpecter Labels, Ma Container le	aste Description Inadequation or Leakage Detected d Exposure Rates Detect urkings, etc. Inadequate integrity Inadequate as Detected on this Ship	ate d ted	transfer from the Generator and b C: WASTE MATER applicable governmental laws, rul	RIALS: Generator represei complete hazardous waste in ceptance at the disposal sit e vested in Envirocare of U IAL: Generator represents ies, reculations and Envirocation. ION: Generator agrees to in ION: Generator agrees to in laterial respects to the data	manife by E stah, in and w care of indemra suppl	est, along with the approprient/incare of Utah, Inc., ar no. varrents that all data set for Utah, Inc.'s facility licensin infy Envirocare of Utah, In lied on the (UNIFORM LO	riate land-dispos nd all appropriat orth in this (UNIF e. nc., its officers, it	al restriction notice and e regulatory authorities ORM LOW-LEVEL RA s employees and agent	d/or certification as n , title to the Waste M DIOACTIVE WASTE ts against all losses :	equired by 40 CFR 268.1 alerial which conforms to (E MANIFEST) are true and and liability whatsoever if s	Generator's representation to correct in all respects and its such tosses or liability results	nerein shall thereupon in accordance with all s from the failure of the

FORM 541			EN	VIROCARE O	F UTAH,	INC.	L			1. MANIFEST TOTALS								2. MANIFES	T NUMBER	
(3-88)							NUMBER OF				SPEC	MAL NIK! FAR	MATERIAL	(orems)]		0659-02-	0001	
							PACKAGES/	NET WASTE	NET WASTE	U-233	U	-235	PL		TOTAL	1		0033-02-	0001	
	UNIFORM LO	DW-LEVE	L RADIOAC	TIVE			DISPOSAL	VOLUME	WEIGHT	0.00E+00	0.00	0E+00	0.00E	+00	0.00E+00	3, PAGE		2 of	3	PAGES(S)
	WA	ISTE MAN	KFEST				CONTAINERS	,	}		}	{		- 1		{				
								(m3)	{kg}		}	-		ì		1				
	CONTAINER	TRAW OWAST	E DESCRIPTIO	N.			1 1	(ft3) 405	(tons) 21.6		i	- 1		l		[
			L DESCRIPTION					11107	<u> </u>	ACTIVITY (MB4)					SOURCE	4. SHIPPER NA	ME	Karr-Mc(ee Chemical LLC	
Additional Much	ear Regulatory Com	mission (NRC)					ALL NU	01 1050	TRITIUM	C-14	7	c-99	I-17		JOURGE) 4. 3mr Livino	-		auch Street	
Vacilional lance			•	or Control, Tran	ISTOR SONG		MB4	CLIDES	0,00E+00	0.00E+00		0E+00	0.00E			-{			cago, IL 60185	
	Ивро	sal of Radiosc	tive Waste				mCl	ļ	0,00E+00	0.00E+00	1	DE+00	0.00E			SHIPMENT ID NU	MOER	West Cit	Cago, IL 60105	
							mci .	L	0.002.00	5.000.00			0.002	+00 (to	ns) 2.18E-02	SHIPMENTIDAD	MDEK			
							 													
DISPOSAL CONTAINER DE	ESCRIPTION						L						EACH WA	STE TYPE IN						16, WASTE
5	e .)7	8	9	10 SURF			PHYSICAL DESCR		14 CHEM	ICAL DESC	RIPTION		15 RAI	HOLOGICAL DESCRIPT	ION				CLASSIFI-
CONTAINER	CONTAINER	}	WASTE	SURFACE	CONTA	MINATION]11	12	13											CATION
IDENTIFICATION	DESCRIPTION	VOLUME	AND	RADIATION	MBq/1	100cm2	WASTE	APPROXIMA	TE SORBENT		- 1	WEIGH	нт j							AS-Class A
NUMBER/	i	i	CONTAINER	LEVEL	dpm/1	100cm2	DESCRIPTOR	WASTE	SOLIDIFICATION	CHEMICAL FORM	1	%	ľ		INDIV	10UAL RADIONUCLIDES,	ACTIVIT	Y (MBq),		Stable
GENERATOR	(See Notes 1)	(m3)	WEIGHT	1	1	1	(See Note 2)	VOLUMES(S)	IN STABILIZATION	CHELATING AGENT	r	CHELAT	TING		CONCE	TRATION, AND CONTAIN	ER TOT	AL ACTIVITY		N/A 11(e)2
ID NUMBERS		(ft3)	(kg)	(mSv/hr)	1	BETA-	t .	CONTAINE	R MEDIA		ì	AGEN	vi							_}
'	1	}	(est. tons)	(mR/hr)	ALPHA	GAMMA		(m3)	(See Note 3)		}	IF>0.1	1%	RAC	HONUCLIDES	pCl/gm	Ī	MBq	mCl	B-Class B
				\	1	1	1				L						1		<u> </u>	C-Class C
					\	1	1										1			
	1		Ì		1	1	1 .		(!		- 1	- } - }				1	1		l	Class A
BKRU00001	11B	540	25.47	0.14	<200	<2000	22, 29	405	100	Thorium Oxide		NP	١ ١	Th-232		9.74E+01)	7.07E+01	1.91E+0	Unstable
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						•											•			
NOTE 1: Containers Description	on Codes. For contains	re/	Note 1A: Bulk P	ackaging Descripto	n Codes	1	NOTÉ 2: Waste De	ecriptor Codes (Ch	socee up to three which predor	ninale by volume)				- 1	NOTE 2A: Specific V	Waste Descriptions	1	NOTE 3. Solidifi	ation, Stabilization Med	a Codes. (Choose up to three

NOTE 1: Containers Description Codes. For containers/ waste requiring disposal in approved structural overpacks the numerical code must be followed by "-OP."

- 1. Wooden Box or Crate
- 9. Demineralizar
- 2 Metal Box 3. Pleatic Drum or Pal
- 10. Gas Cylinder 11. Bulk, Unpackaged Waste
- 4. Metal Drum or Pail 12 Unpackaged Components 5. Metal Tank or Liner
- 13 High Integrity Container 6. Concrete Tank or Liner 19. Other. Describe in Nem 6, 7. Polyethylene Tenk or Liner or additional page

8 Fibergless Tank or Liner

(Choose one code as may be applicable.)

- A Gondola
- B Intermodal C End-dump
- D Roll-off E Seavan

20. Charcoal 21. Incinerator Ash

23. Ges

- 22. Soil
 - 31. Anion lon-exchange Media
- 24. OI 25 Aqueous Liquid 26. Filler Media 35. Glassware or Labware
- 27. Mechanical Filter 28. EPA or Sate Hazardous 37. Pant or Plating

29 Demolition Rubble 30 Cation Ion-exchange Media

32. Mixed Bed fon-Exchange Media

33. Conteminated Equipment 34. Organic Liquid (except animal carcass)

42 Biological Material (Except Animal Carcass) 43 Activated Material

36 Seeled Source/Device

59 Other Describe in item 11, or additional page

39 Compactable Trash

41. Animal Carcass

40. Noncompactable Trash

38 Evaporator Bottoms/Studges/Concentrations

(Choose all applicable)

- G Dewatered
- H Solid 1 Combustable J Non-combustable
- K Air Fulfration Filters

L Asbestos

which predominate by volume.) For solidification media meeting disposed structural stability requirements, the numerical code must be followed by: ST For all solidification media.

94 Vinyl Ester Styrene 90. Cement 91 Concrete 99. Other Describe in item 13, or (encapsulation)

92. Bitumen 93 Vinyl Chloride

additional page 100 None Required

DRIVER INSTRUCTIONS

This shipment is being transported as an Exclusive Use shipment. As such, it may only be loaded by the direction of the consignor and unloaded under the direction of the consignor or consignee. Any removal, addition to, or movement of any material in this shipment by anyone except under the direction of the consignee or consignor is Forbidden.

PUBLIC SAFETY

- In case of emergency: <u>CALL CHEMTREC</u> 1-800-424-9300
- Then call 1-630-293-6330 to inform consignee
- Priorities for rescue, life saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation.

EMERGENCY RESPONSE INFORMATION

For additional emergency response information, use Guide page 162 of the North American Emergency Response Guide 2000.

Potential Hazards:

- Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents.
- Low radiation hazard when material is inside container. Some material may be released during accidents of moderate severity but risks to people are not great.
- Runoff from control of fire may cause low-level pollution.

Fire:

- Some of the debris may burn, but most do not ignite readily.
- Presence of radioactive material will not influence the fire control process and should not influence selection of techniques.

Spill or Leak:

- Do not unnecessarily touch damaged packages or spilled material.
- Cover material spill with plastic sheet or tarp to minimize spreading.

First Aid:

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.

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			5. SHIPPER -	NAME AND FACILITY		1 :	SHIPPER I.D. NUMBER	ł				8. MANIFEST NUMI	BER
(3-98)			ļ	Kerr-McGee Chemical L	LC	1	0659	7. NRC FO	RM 540 AND 540A	PAGE 1 C	F 2 PAGE(S)	(Use this number on all con	tinuation pages)
				P.O. Box 548		L		NRC FOR	M 541 AND 541A	PAGE 2 C	F 2 PAGE(S)		
UNIFORM LOW-LI	EVEL RADIO	ACTIVE	1	800 Weyrauch Street	1		COLLECTOR	NRC FOR	M 542 AND 542A		lof Used	0659-02-	0001
	MANIFEST		1	West Chicago, IL 6018	85	\vdash	 	1					
TVASIE	MANIFEST		!			-	PROCESSOR		IAL INFORMATION		of Used		
1					T	┨ "	GENERATOR TYPE	9. CONSIGN	EE - Name and Facility			CONTACT	and Deposit days
SHIPPII	NG PAPER		UTAH PERMIT		SHIPMENT NUMBER	×	Industrial	1	Envirocare of Uta			Snipping a	nd Receiving
1. EMERGENCY TELEPHONE NUMBER	flashed A - Code		4	0110 000 013	{	├ ~	TELEBRONE NUMBER	ł	Clive Disposal Si			TEL EDUCATE MUNIC	DED.
_	•	2)			<u> </u>	-	TELEPHONE NUMBER	ì	Interstate 80, Exit			TELEPHONE NUM	BER 84-0155
In Case of Emergency Call CHEMTRI ORGANIZATION	EC 1-800-424-9300		CONTACT	Mark Krippel		1	(Include Area Code) 630-293-6330		Clive, UT 84029			- (+) 01	04-0100
Kerr-McGee Chemical LLC			A CARRIER	Name and Address		┿╌	EPA I.D. NUMBER	SIGN	TURE - Authorizen co	onsidnee acknowle	dding waste receim	DATE	
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?	3. TOTAL NUMB	ED 1	B. CARRIER	Union Pacific Railro		1	EFA I.D. NUMBER	1				DATE	
X YES	OF PACKAGES			1416 Dodge Street		-	SHIPPING DATE	 -			10. CERTIFICATION	<u> — — — </u>	
I FINO	IDENTIFIED ON T	HIS	1	Omaha. NE. 68179		1		This is to cer	tify that the herein-nar	ned materials are r		bed, packaged, marked, ar	nd labeled and are in
L	MANIFEST ====		1	Omana. NE. VOT73		1	7/22/02					the Department of Transpo	
4. DOES EPA REGULATED YES	EPA MANIFEST N	UMBER	CONTACT			╫	TELEPHONE NUMBER	certifies that	the materials are class	ified, packaged, at	d labeled and are in prop	per condition for transport	ation and disposal as
WASTE REQUIRING A Y NO			CONTACT	Dale Brav			(Include Area Code)	described in	accordance with the re	equirements of 10	CFR Parts 20 and 61, or e	quivalent state regulations	S.
IMARIFES ACCOMPANT	1		1	55.0		1	888-877-7267	Į.					
THIS SHIPMENT?	1		SIGNIATURE .	Authorized carrier acknowledge	ing waste receipt	+	Date	AUTHORIZ	ED SIGNATURE		TITLE		DATE
If "Yes," provide Manifest Number =====>			SIGNATURE	Additionated Carrier acknowledge	ing waste receipt	1	7/22/02	AOTHORE	LU SIGNATURE			fanager	7/22/02
	1		i			1		i .			1	nanagoi	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
11. U.S. DEPARTMENT OF TRANSPORTATE	ON DESCRIPTION	12	13	14	T	٠	15		1	<u> </u>	17	18. TOTAL WEIGHT	19. IDENTIFICATION
(Including proper shipping name, hazard cl			TRANSPORT	PHYSICAL AND	1		INDIVIDUAL		TOTAL PACKA		LSA/SCO	OR VOLUME	NUMBER OF
and any additional informati		"RADIOACTIVE"	INDEX	CHEMICAL FORM	1		DIONUCLIDES		10172171010	OL/IOIIIII	CLASS	(Use appropriate units)	PACKAGE
									MBq	mCi	1	, , , , , , , , , , , , , , , , ,	
									1			T	
Ore tailings and soils and debris	containing	NA NA	NA NA	Solid / Thorium Oxide	Th-232	2. Ra	a-226, Th-230, U-na	t	2.81E+01	7.59E-01	NA NA	21.61	BKRU00002
											1	tons	
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small amounts of radioactive ma	terial with		1	1							i	1	
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FOR CONSIGNEE USE ONLY				20. TERMS AND CONDITION	ON								
	Record Wa	aste Description Inadeq	uate			ents &	warrents that Waste Mate	rialis (or)	X is not a hazardous w	raste as defined in A	0 CFR 261. Where the ma	aterial is a hazardous waste	, this shipment is also
	.			accompanied by a separate and	complete hazardous waste	manif	ifest, along with the approp	riate land-dispo	sal restriction notice an	d/or certification as a	equired by 40 CFR 268.1		
Ĭ	Contamina	ation or Leakage Detecte	ea	D. TITLE 41			Fa.:			## - to the life at a	latarial urbish conforms to	Generator's representation I	horein shall theremon
	Unexpecte	ed Exposure Rates Dete	cted	B: TITLE: Upon acting the Generator and I				no an appropria	tile regulatory authorities	, due to une waste n	Tales led William Coll Coll Coll Coll Coll Coll Coll Col	Generalor's representation i	nerem snam mereupon
	•	•		C: WASTE MATER	RIAL: Generator represent	s and	warrents that all data set for	orth in this (UN	FORM LOW-LEVEL RA	DIOACTIVE WAST	E MANIFEST) are true and	d correct in all respects and i	in accordance with all
}	Labels, Ma	arkings, etc. Inadequate		applicable governmental laws, n	iles, regulations and Enviro	ocare o	of Utah, Inc.'s facility licens	ie.					
1	Cantaine	Integrity Inadequate		D: INDEMNIFICAT	FION: Generator agrees to	inden	mnify Envirocare of Utah, Ir	nc., its officers,	its employees and agen	ts against all losses	and liability whatsoever if	such losses or liability result	s from the failure of the
1	container	Integrity Inadequate		Waste Material to conform in all Transportation or any governmen				JW-LEVEL RA	DIOACTIVE WASTE MA	ANTED I) OF IT THIS S	inprimentialis to meet the s	narmarus presented by the L	reparement of
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UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST CONTAINER AND WASTE DESCRIPTION Additional Nuclear Regulatory Commission (NRC) Regularements for Control, Transfer and Disposal of Redioactive Wester ACTIVITY (MBg) 1 (19.3) (19.9) (19	FORM 541			EN	VIROCARE O	F UTAH	, INC.				1. MANIFEST TOTALS					T	2. MANIFE	ST NUMBER		
UNIFORM LOW-LEVER, RADIOACTIVE WASTE MARKEST CONTAMER AND WASTE DESCRIPTION AddStond hulbest Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control, Trender and Control Reputatory Commission PRICE Reputation for Control Reputatory Commission PRICE Reputation for Control Reputation Price Reputation For Repu	(3-98)						NUMBER OF				SPECIAL NUCLEA	R MATERIAL form	mst		1	0050 00	0004			
UNIFORM LOW-LEVEL RADJOACTIVE WASTE DISCORPTION Additional National Regulatory Commission (RR) Regulatory Commission (RR) Regulatory Regulatory Commission (RR) Regulatory Regulatory Commission (RR) Regulatory								PACKAGES/	NET WASTE	NET WASTE	U-233	U-235 PI		U TOTAL		1				
1		UNIFORM LO	OW-LEVE USTE MAN	_ RADIOAC	TIVE			•	VOLUME	WEIGHT	0.00E+00	0.00E+00	0.00E+00		0.00E+00	3. PAGE	2 of	2	PAGES(S)	
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Ministry															SOURCE	4. SHIPPER NA				
PRINCE SOCIETION	Additional Nuc	lear Regulatory Com	mission (NRC)	Requirements t	for Control, Tran	nsfer and			CLIDES							4				
PROPRIAL CONTAINER DISCREPTION CONTAINER DISCREPTION CONTAINER DESCRIPTION CONTAINER DESCRIPTI		Dispo	sal of Radioac	tive Waste									L							
CONTAINER CONT								mCi		0.00E+00	0.00E+00	0.00E+00	0.00E+00	(tons)	3.43E-03	SHIPMENT ID NU	- 34-			
CONTAINER CONT																				
CONTAINER CONT	DISPOSAL CONTAINER D	ESCRIPTION								т									-1	
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GENERATOR (See Notes 1) (MI)		DESCRIPTION	VOLUME					1		1										
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BKRU00002 11B	ID NOMBERS		(163)			1		•		I I		II		RADIONI	CLIDES	oCi/am	MRa	mCi	- B.Class B	
BKRU00002 118		(est. tons		(esc. toris)	(~~	O Commo	Ì		(555 (100 5)								<u> </u>	C-Class C	
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Ra-226 6.92E+00 5.03E+00 1.36E-01 Class A Th-230 < 2.29E+00 < 1.67E+00 < 4.50E-02 Class A Unstable U-nat < 1.42E+01 < 1.03E+01 < 2.78E-01 Unstable	BKRU00002		540	25.47	0.022	<200	<2000	22, 29	405	100	Thorium Oxide	N	Р	Th-2	232	1.53E+01	1.11E+01	3.00E-01	Unstable	
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NOTE 1: Containers Description Codes For containers/ waste requiring disposel in approved structural overpacks the numerical code must be followed by "-OP "

1. Wooden Box or Crate

9. Demineralizer

2. Metal Box 3. Plestic Drum or Pal 4. Metal Drum or Pall 10. Gas Cylinder 11. Bulk, Unpeckaged Waste

5. Metal Tank or Liner

12. Unpackaged Components 13. High Integrity Container 6 Concrete Tank or Liner 19. Other. Describe in Item 6, or additional page

7. Polyethylene Tenk or Liner 8 Fiberglass Tenk or Liner

Note 1A: Bulk Packaging Description Codes (Choose one code as may be applicable.)

A Gondola

B Intermodal

C End-dump D Roli-off

E Seavan

24. Oil 26. Filter Media 27. Mechanical Filter

22. Soil

23. Gas

25. Aqueous Liquid

20 Charcost 21. Incinerator Ash

28 EPA or Sale Hazardous

29 Demolition Rubble

30 Cation Ion-exchange Media

31 Anion Ion-exchange Media

32. Mbed Bed lon-Exchange Media 33 Conteminated Equipment

34 Organic Liquid (except animal carcess) 35 Glasswere or Labware 36. Sealed Source/Device 37 Pant or Plating

38. Evaporator Bottoms/Sludges/Concentrations 39 Compactable Trash

40. Noncompectable Trash 41 Animal Carcass

42. Biological Material (Except Animal Cercess) 43. Activated Material

59. Other. Describe in Item 11,

or additional page

(Choose all applicable)

G Dewatered

H Solid

I Combustable J Non-combustable

K Air Filtration Filters

L Asbestos

NOTE 3: Solidification, Stabitization Media Codes. (Choose up to three which predominate by volume.) For solidification media meeting disposal structural stability requirements, the rumerical code must be followed by "S. For all solidification media."

Solidification

94, Vinyl Ester Styrene 90 Cement 99 Other Describe 91 Concrete

(encapsulation) 92 Bitumen 93 Vinyl Chlonde

in Nem 13, or ackStoonal page 100. None Required

FORM 541 (3-98)